

1. PURPOSE AND APPROACH

"...EPA's cleanup programs have set a national goal for returning formerly contaminated sites to long-term, sustainable and productive use."

2003-2008 EPA Strategic Plan - Direction for the Future

1.1 Goals of Assessment

To gauge progress on EPA's goal to return formerly contaminated sites to productive use, Region 3 conducted a comprehensive land use assessment on the surficial use and reuse of land at hazardous waste cleanup sites during the Spring of 2005. This assessment included CERCLA (Superfund) NPL sites, RCRA Corrective Action high priority facilities, and Federal Facilities, which include both Superfund and RCRA sites. Although anecdotal success stories exist to show that revitalization of cleanup sites is occurring, Region 3 undertook a cross-program effort to collect quantifiable data to enable the region to measure progress toward this goal. In conjunction with EPA OSWER, which is seeking to identify and establish cross-program land revitalization measures, Region 3's RCRA, Superfund, and Federal Facility programs collected land use information with the following objectives:

- Establish a Regional baseline on total acres of land being addressed by these cleanup programs and the current land use occurring on these sites. This baseline will enable the Agency to track over time the number of sites and acres that are: in continued use, reused, have a plan for reuse, or have no current use;
- Identify the sites, or portions of sites, which have no current use and evaluate options to facilitate use of these properties;
- Determine the extent of reuse occurring in the cleanup programs;
- Determine the types of reuse occurring at cleanup sites to help communicate more tangible information regarding accomplishments;
- Track and subsequently enhance the EPA and state tools used to facilitate reuse;
- Collect information to demonstrate the positive local impacts (economic as well as ecological) resulting from use and reuse;
- Provide a better understanding of the relationship between the status of cleanup and reuse; and
- Identify challenges in collecting this kind of information prior to developing and promoting broader national measures for land revitalization.

This report includes background information, the assessment approach, data analysis and findings, lessons learned, recommendations, and potential next steps.

1.2 Background

Usable land is a valuable resource. However, where contamination presents a real or perceived threat to human health or the environment, options for future land use at a site may be limited. Reusing contaminated sites creates greater impetus for selecting and implementing remedies that, in addition to providing clear human health and environmental benefits, will support reasonably anticipated future land use options and provide greater economic and social benefits.

As a demonstration of its commitment to support the continued use and reuse of contaminated property, EPA summarized the current status of measuring land revitalization in several cleanup programs and outlined a conceptual framework for cross-program measures in OSWER's draft report, *Measuring Revitalization of Contaminated Properties in America's Communities: Past Accomplishments and Future Opportunities* (July 27, 2005). Region 3's land use assessment provided EPA's Land Revitalization Office an opportunity to evaluate the feasibility of collecting some of the information proposed in their conceptual cross-program framework.

EPA Region 3's Superfund, Federal Facility, and RCRA Corrective Action programs are committed to facilitating beneficial use and reuse of contaminated sites. These programs joined forces with the support of OSWER's Land Revitalization Office to pilot a data collection effort to develop program baselines and evaluate the applicability of cross-program land reuse measures.

The assessment offers a snapshot of the current status of land use at cleanup sites in Region 3 and an indication of the influence Agency efforts are having on facilitating reuse. This assessment, however, did not account for local market forces and other external factors. External factors relevant to site reuse include location, surrounding land use, local economic conditions, crime rates, proximity to amenities, and local government involvement and commitment to redevelopment. Since these factors were not considered, the results may both under represent EPA and state efforts to facilitate reuse where insurmountable barriers exist and unduly credit the agencies where market forces had enough impetus to stimulate revitalization on its own.

Why is Land Revitalization Important?

Land is a finite resource that plays an important role in the health and vitality of America's communities. EPA is committed to supporting land revitalization as an outcome of the assessment and cleanup of contaminated sites because:

- ***A significant amount of land may unnecessarily remain unused or underutilized***
- ***Revitalization can result in higher levels of protection***
- ***Revitalization can increase the pace of the assessment and cleanup process***
- ***Revitalization can bring economic, social, and ecological benefits to communities***
- ***Revitalization can support land use planning trends***

Source: "Measuring Revitalization of Contaminated Properties in America's Communities: Past Accomplishments and Future Opportunities", OSWER draft report, July 27, 2005

Superfund

The Superfund program was created to investigate and clean up abandoned or uncontrolled hazardous waste sites. Sites with known or potential health or environmental risks that are placed on the National Priorities List (NPL) qualify for Superfund cleanup and are eligible for long-term remedial action financed under the federal Superfund program. The goal of the Superfund Redevelopment program is to provide tools and information needed to help communities return Superfund sites to productive use. In fiscal year 2004, the Superfund program announced new Government Performance Results Act (GPRA) measures to document land revitalization accomplishments. The revitalization performance measures being reported are the number of Superfund sites and acres of land that are ready for residential or non-residential reuse. Region 3's land use assessment collected more detailed information relating to revitalization occurring on Superfund sites.

RCRA Corrective Action

The RCRA Corrective Action program was designed to oversee the cleanup of operating industrial facilities which manage hazardous waste. However, due to a variety of economic factors, the RCRA Corrective Action program is also currently investigating and cleaning up property with a variety of non-industrial uses. Although the majority of sites continue to be used for industrial purposes, some are being reused for commercial, residential, and recreational purposes. Also, a growing number of sites are becoming vacant. While EPA is cognizant of changes in property use at RCRA sites, to date the program has not collected meaningful data to assess the situation which may have implications on achieving program cleanup goals.

Federal Facilities

Region 3's Federal Facility program addresses primarily military sites which are owned by the Federal government. The authority to require cleanup at a Federal Facility may fall under the jurisdiction of either RCRA Corrective Action, Superfund, or both as many Federal Facilities requiring cleanup are also listed on the NPL. In Region 3, the Federal Facility program resides with Superfund in the Hazardous Site Cleanup Division (HSCD). As a result, most of the Federal Facility cleanups are carried out by HSCD's Federal Facility program which relies on CERCLA authority, but some are implemented under the RCRA Corrective Action program. The Region assessed current land use at all of the NPL Federal Facilities and Base Realignment and Closure (BRAC) sites, and some non-NPL Federal Facilities.

1.3 Implementation

A cross-program workgroup planned the land use assessment project with representatives from:

- Region 3 Land Revitalization Program
- Region 3 Superfund Program
- Region 3 Federal Facility Program
- Region 3 RCRA Corrective Action Program
- Virginia Department of Environmental Quality RCRA Corrective Action Program
- OSWER Office of Land Revitalization
- OSWER Office of Solid Waste
- OSWER Office of Superfund Remediation Technology Innovation

The workgroup developed data elements and definitions which were formatted into a Land Use/Reuse Assessment Form (Appendix A), and distributed the form to EPA and state project managers. The project managers were instructed on how to fill out the forms, and Region 3 management provided project managers with one month to collect the information. The programs collected information for 511 cleanup sites. For RCRA, the Region collected use/reuse information on the 289 high priority facilities that comprise Region 3's 2008 GPRA baseline. Nine of these RCRA sites are Federal Facility sites. For Superfund, the pilot collected use/reuse information on the Region's 174 NPL sites and 48 Federal Facilities being addressed by the Superfund program, many of which are also on the NPL.

Project managers reported information for each site in acres. For a RCRA site, acres were based on the land located within the facility's property boundaries. For a Superfund site, property acres included all acres of land on which investigation and/or cleanup occurred. At all sites, areas where ground water contamination has migrated off the property were not counted as part of the site. For sites with contaminated surface water, sediments, or ground water, use or reuse of the site applied only to the land portion of the site under investigation or cleanup.

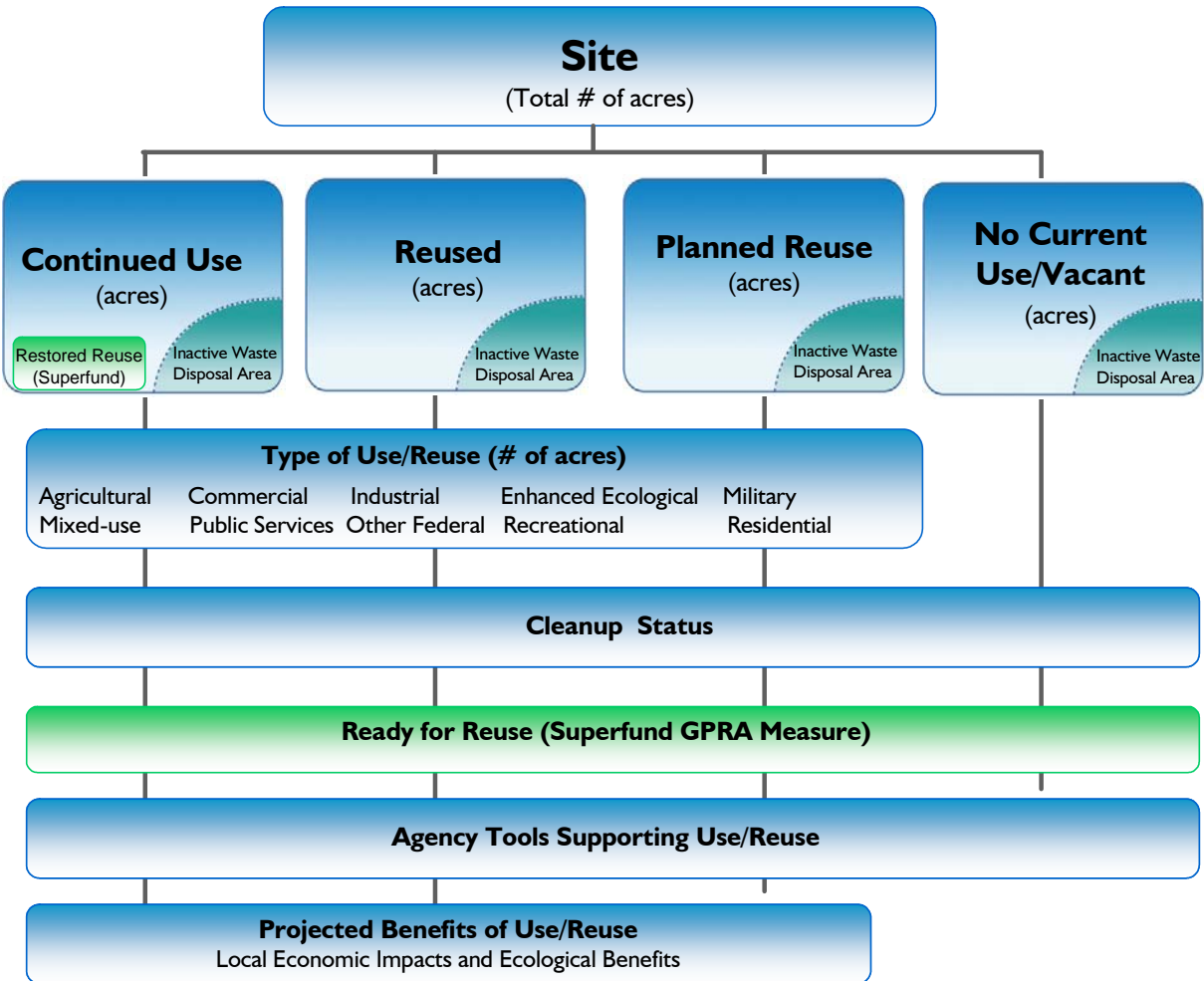
To comply with the requirements under the Paperwork Reduction Act, EPA project managers and Region 3 states were directed to provide information based on their knowledge, the knowledge of individuals in their agency, information made available to their agency in the course of implementing the site cleanup, or publicly available information (e.g., Web sites). In addition, EPA project managers and state agencies were instructed to not seek specific information from private entities in response to this land use assessment.

All the information from the assessment forms was transferred to a spreadsheet. OSWER provided contractor support to develop the spreadsheet, generate the report and manage the data elements discussed in the following sections.

1.4 Overview of Data Collected

This land use assessment involved collecting information in key areas explained below and graphically presented in Figure 1-1.

Figure 1-1: Overview of Region 3 Hazardous Waste Cleanup Sites Land Use/Reuse Assessment



1.4.1 Current Land Use

Region 3 collected Current Land Use data to establish a baseline to track into the future the number of sites and acres that are reused over time, become vacant, and that remain in continued use. This information quantifies the extent of reuse occurring and identifies the sites or portions of sites, which have no current use/vacant. Region 3 used the following four categories of Current Land Use for all sites: 1) Continued Use, 2) Reused, 3) Planned Reuse, and 4) No Current Use/Vacant.

- **Continued Use** – A site or portion of a site which is currently being used in the same general manner as it was when the site became contaminated. For example, continued use would be an appropriate description for a property where industrial operations resulted in the contamination and the property is still used as an operating industrial facility.

The RCRA program counted all acres of an active RCRA industrial facility as Continued Use, except for parcels specifically designated as Reused or Planned Reuse. In the Superfund program project managers recorded the situation where the use of a property was temporarily halted during cleanup and the same use was resumed after the site was cleaned up. This is a special kind of Continued Use referred to in the Superfund Reuse (SURE)² Database as *Restored Reuse*.

- **Reused** – A site or a portion of a site where a new use or uses is occurring such that there has been a change in the type of use (e.g., industrial to commercial) or the property was vacant and now supports a specific use. This means that the developed site, or portion of the site, is “open” or actually being used by customers, visitors, employees, or residents, etc. OSWER’s draft report, *Measuring Revitalization of Contaminated Sites in America’s Communities: Past Accomplishments and Future Opportunities* (July 27, 2005), refers to this scenario as *New Use*.
- **Planned Reuse** – A site or portion of a site where a plan for a new use or uses is in place. This could include conceptual plans, a contract with a developer, secured financing, approval by the local government, or the initiation of site redevelopment.
- **No Current Use/Vacant** – A site or portion of a site which is currently vacant or not being used in any identifiable manner. This could be because site investigation and cleanup are ongoing, operations ceased, the owner is in bankruptcy, or cleanup is complete but the site remains vacant. At vacant properties, project managers also reported on whether there was any interest in site reuse and whether vacant areas were not recommended for reuse.

For sites where current land uses fit into more than one category, project managers estimated the number of acres that fell within each category. For example, a 100-acre site may have 50 acres in reuse and 50 acres with no current use.

²EPA's Superfund program in headquarters created the SURE database to track reuse characteristics at Superfund sites.

EPA Region 3 - Hazardous Waste Cleanup Sites Land Use & Reuse Assessment

In addition to determining the surficial use of land, information was also collected on acres of subsurface land which was historically used for the disposal of solid or hazardous waste. Inactive waste disposal areas no longer receive waste and may have a cover to protect direct exposures. However, remedies selected for these areas will typically result in long term management of waste in-place, resulting in added challenges to their reuse. While EPA supports the reuse of inactive waste disposal areas, where appropriate (e.g., parking lots, wildlife habitat areas, golf courses), these areas may have limited reuse options; and, in certain situations, a remedy may specifically prohibit the land's reuse to protect the integrity of the remedy. As discussed in Chapter 3, Data Results, many project managers recorded inactive waste disposal areas as "not recommended for reuse." Collecting information on inactive waste disposal areas may explain why a certain percentage of land is not being used/reused.

1.4.2 Type of Use

Region 3 collected information, in acres, for each Type of Use occurring or planned to occur to identify the most common types of uses occurring at cleanup sites. For property designated as No Current Use, project managers did not need to record a Type of Use.

Type of Use provides information to help EPA and states identify and communicate what kinds of economic, social, or environmental benefits may be occurring at a site. For example, if the site is being used for commercial or industrial purposes, we can assume that jobs were either created or retained as an economic benefit associated with the site. For sites reporting recreational use, on the other hand, we can assume that significant social or environmental benefits were provided to the community. The assessment used the following Type of Use categories. (See Appendix A for the Type of Use definitions.)

- | | | |
|---------------------------|----------------------|--------------------|
| • Agricultural Use | • Mixed Use | • Recreational Use |
| • Commercial Use | • Military Use | • Residential Use |
| • Enhanced Ecological Use | • Other Federal Use | |
| • Industrial Use | • Public Service Use | |

After selecting a Type of Use category, project managers reported on the specific use occurring at each portion of the site. For example, if a portion of the site was identified as "public service," the project manager described the specific use or uses, such as government office building, or public transit depot, etc.

To address difficulties in distinguishing between the Type of Use and multiple uses over time, project managers were instructed to follow the SURE database approach to categorizing reuse types. That is, the predominant activity, function, and likely exposures scenario determines how a site is categorized. For example, a project manager would categorize a privately-owned golf course, which in this case can be categorized as either recreational or commercial, as recreational. The categorization of recreational reflects the likely exposures scenario, rather than commercial, which considers the financial aspect of the business. Second, to address the situation where a site had multiple types of uses over a period of time, project managers were directed to record the most recent type of use.

1.4.3 Cleanup and Reuse Connection

For each Type of Use designated at a site, project managers reported the current cleanup status for that parcel, which provides EPA with an indication of the relationship between cleanup and reuse of sites. Project managers used the following broad cross-programmatic milestones to record the status of investigation and cleanup: investigation; remedy selected and/or implemented; construction complete; and RCRA complete/Superfund delisted or partial delisting. It was envisioned that if reuse could be correlated with certain cleanup goals, the national program could use this information to highlight the benefit of achieving certain cleanup targets which support use and reuse. For vacant land areas, Region 3 intends to use cleanup status to assist in developing strategies for facilitating reuse.

1.4.4 Agency Effort to Facilitate Use/Reuse

For all sites, project managers reported on the tools used to facilitate the continued use and reuse of the property such as: comfort letters; coordination with a state Voluntary Cleanup Program (VCP); Ready for Reuse Determinations; prospective purchaser agreements (PPAs); meetings; and conference calls, etc. Project managers also reported if there was no Agency effort beyond cleanup. This data element gives the programs information on the type and frequency of tools which project managers use to facilitate use/reuse. The expectation was that this information would enable the Region to qualitatively assess the level of involvement associated with facilitating the reuse of cleanup sites.

1.4.5 Economic and Environmental Benefits

For sites in use, project managers reported, to the extent practical, information on the local economic impact and ecological benefits associated with land in use or reuse. Project managers reported any information about benefits known at the time. Information was not solicited. Project managers also had the option of indicating on the form that “no information is available at this time.” The form was designed so that project managers could indicate whether benefits existed (“Yes/No” format) and the actual quantifiable (numerical) data about those benefits. For example, project managers were asked whether jobs were created at the site and to report the exact number of those jobs leveraged, if known.

Region 3 based the data elements on those already being used by EPA’s Brownfields program to measure the benefits of brownfields redevelopment. The type of information collected included: permanent jobs added locally, changes in property value from before and after the development, number of houses built, etc. In addition, the Region attempted to track any sustainable reuse elements occurring at sites (e.g., green building design or native landscaping). To ensure that the data provided was a reasonable estimate, project managers were instructed to only record benefits that accrued when the design phase of the use/reuse project was complete, to note on the form if the information was preliminarily based on the planned reuse of the site, and to provide the source of the information. Refer to the Hazardous Waste Cleanup Sites Land Use/Reuse Assessment Form in Appendix A for a description of each benefits category.

1.4.6 Ready for Reuse

Consistent with the EPA guidance memorandum, *Guidance for Documenting and Reporting the Superfund Revitalization Performance Measures*, (OSWER 9202.1-26, November 5, 2004), Superfund project managers also recorded acres of land at the site that are Ready for Reuse and whether the areas are suitable for either residential or non-residential reuse. Acres considered Ready for Reuse include land areas currently being used; where investigation occurred and response actions were deemed unnecessary; or where cleanup goals for the land have been attained. Ready for Reuse information is already available in CERCLIS. At the time of publication, this reporting requirement did not apply to RCRA sites.